

Acain.—BRUNETIERE (*Clin. ophthalm.*, July 10, 1909, 326) recommends subconjunctival and intramuscular injections in 1 per cent solution. The analgesic effect, although inferior to that of cocaine, is much more prolonged and entirely free from risk. Acain is quite unstable and forms insoluble precipitates with most medicaments in solution; such chemical alterations diminish the analgesic properties of the drug; hence, to obtain the maximum effect in subconjunctival and intramuscular injections, it is advisable to inject first the solution of acain, followed after an interval of one or two minutes by the medicament desired. Acain may also be employed dissolved in oil, but this vehicle does not appear to be superior to aqueous solutions.

Normal Flora of the Rabbit's Conjunctiva.—TCHIRKOWSKY (*Annal. d'oculist.*, April, 1909, 291) finds that the flora of the normal conjunctival sac of the rabbit presents a great variety of forms, and differs from that of man by the rarity of bacilli in aggregation. Both aerobic and anaerobic forms are present, among which some are of undoubted pathogenic effect upon the eye (*Bacillus perfringens*). The pathogenic power of the microbes which occur there most frequently is, however, inconsiderable; it is only under particularly favoring conditions, especially by the introduction of large numbers into the vitreous body, that the germs develop rapidly and entail destructive consequences to the organ.

The Etiology of Refractive Anomalies and Emmetropia.—STRAUB (*Zeit. f. Augenheilk.*, 1909, xxii, 236) observes that, in view of its overwhelming frequency, emmetropia has been assumed to be the normal refraction. But when the fact is taken into consideration that the eyes of the newborn are mostly hyperopic, while emmetropia, notwithstanding decided variations in the structure of individual eyes, is attained with great exactness in the adult and that only a minority of emmetropes become myopic during adolescence, one must assume some mechanism which guides the increase in the refraction of the newborn that emmetropia shall result, and which shall govern the eyes having arrived at emmetropia so that the majority shall not become myopic. Straub terms this mechanism "emmetropization." Emmetropization assumes that length of axis and lenticular refraction shall be so related that emmetropia shall result. Of these two factors, the lenticular refraction is the predominant. If the shape of the lens was brought about by two antagonistic muscles, the explanation would be apparent. Clonic contraction of the muscles would then cause positive and negative accommodation, while tonic contraction of the antagonists would determine the shape of the lens in repose. The tone of the ciliary muscle can only increase the refraction, not diminish it. The intra-ocular tension tends to give the eye a spherical form. The circular groove between the cornea and sclera opposes this tendency. The most elastic tissue would be unable to withstand such continuous pressure permanently. Muscle alone can offer constant resistance, and this is furnished by the circular portion of the ciliary muscle. It is the cause of the groove. The intra-ocular tension is the antagonist required; it is this which tends to smooth out the curve in consequence of which also the lens is flattened and the refraction diminished; the ciliary muscle by its tonic contraction

opposes such flattening and is the force which determines adaptation for distance. Such tonic contraction leads in the developing eye to permanence of structure of the form of the ciliary muscle, so that the length of the muscle which was in the beginning a dynamical factor becomes static. A slight degree of tone persists in the majority of eyes. An important practical question relating to the development of myopia arises in connection with these views. In such eyes also which have departed from emmetropia the *nisus* to adaptation for distance had also been active, but it has been overcome, the axis has increased in length. If the optical condition of emmetropia has been restored by fully correcting glasses, the mind has been given renewed opportunity to put in play the mechanism of emmetropization so that a psychic factor is the principal role in the efficacy of full correction. The emmetropia thus furnished will only be permanent in cases in which the subject manifests a desire to see clearly at a distance. If such desire is not present, the correcting glasses will not prevent the myopia from progressing. Loss of tone of the ciliary muscle diminishes the resisting power of the ocular walls and permits enlargement of the myopic eye. Full correction increases the power of the ciliary muscle in that it stimulates the accommodation.

Malignant Growths of the Frontal Sinus.—In reporting a case of this rare affection, SNEGIREFF (*Klin. Monatsbl. f. Augenheilk.*, 1909, 622) insists that there is no early symptom which differentiates a malignant growth from other affections of the frontal sinus, such as empyema or polyp. Prominence of its wall with consequent displacement of the eyeball and double vision, impairment of the sight, and pain are symptoms common to different conditions. The diagnosis cannot be made with certainty so long as the posterior wall is still intact, the meninges uninvolved, the growth limited to its original seat, etc.

Treatment of Strabismus by Operation upon the Non-squinting Eye.—BETREMIEUX (*Annal. d'oculist.*, 1909, 53) again urges tenotomy of the non-squinting eye. He argues that, the fixing eye, by reason of the synergy of the lateral movements, can only maintain its proper position by exaggerating the deviation of its congener; after a moderate tenotomy of its internus, it readily conserves the correct position but this is only possible on condition that its congener does the same. He thinks that if Donder's theory is correct, operation upon the non-squinting eye is logical.

The Inner Pole Magnet.—MELLINGER (*Archiv. d'ophtal.*, 1909, 193) objects to the giant magnets usually employed, that the lines of force are too strongly divergent, tending as they do to join the opposite pole, so that the foreign body within the eye which must be magnetized by these same lines of force, is only affected by a small part of them—a disadvantage the more marked in proportion as the foreign body is lodged deeper within the eyeball. To compensate this loss, the transverse section of the iron bar may be augmented, but such increase in size interferes with facility of manipulation. In order to diminish this loss, Mellinger has had constructed a large solenoid with several hundred windings of wire of such size that the head may be placed